

ZnO HEMTs on Flexible Substrates for Large Area Monolithic Antenna Applications, Phase I

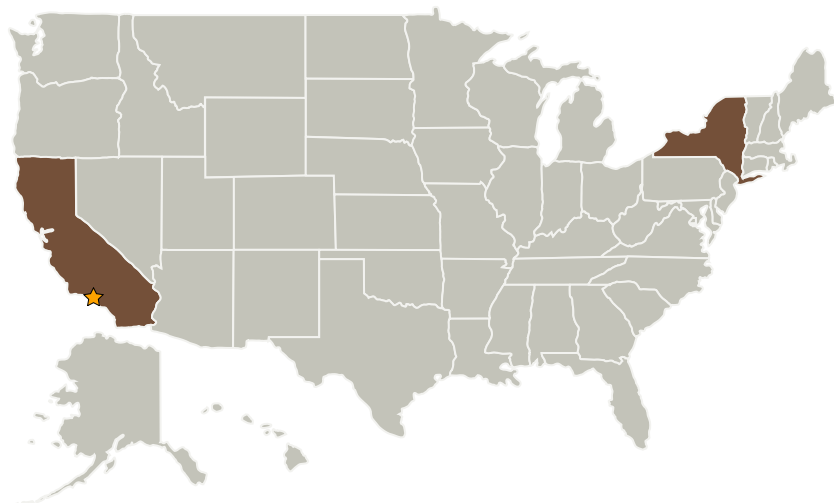
Completed Technology Project (2006 - 2006)



Project Introduction

AMPB Tech will implement Zinc Oxide high mobility material technology it has developed specifically for flexible electronics into a direct write process onto large area polymer membranes. The implementation of this technology will form the core components of transmit/receive components of a synthetic aperture radar flexible antenna that can operate in the L-band and enable imaging of the earth from GEO and MEO orbits. The core issues that will be addressed in the Phase I program will include the demonstration that the high mobility material translates to high frequency response transistors suitable for power and signal amplification in transmit/receive modules, development of a low temperature ohmic contact forming process, exploration of advance FET ZnO device layer architectures, and most importantly the demonstration of the direct write capability of the LAMBD technology. In Phase II, AMPB Tech will integrate these process modules with other metal and dielectric direct write technologies to realized monolithic transmit/receive modules directly on a polyimide substrate and demonstrate a small 2D Synthetic Aperture Radar Antenna Array.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
AMBP Tech Corp	Supporting Organization	Industry	Tonawanda, New York

Primary U.S. Work Locations	
California	New York

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.4 Microwave, Millimeter-, and Submillimeter-Waves